

REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 1, 3-13, 15, 16 and 19-24 were pending, with claims 15 and 16 being withdrawn. By the present response, claims 1, 4 and 23 have been amended, claims 15-16 canceled, and claims 25-27 have been added. Thus, upon entry of the present response, claims 1, 3-13, 15, 16 and 19-27 remain pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: paragraphs [0019], [0030] and [0044]; and the original claims.

Entry of the foregoing is appropriate pursuant to 37 C.F.R. §1.116 for at least the following reasons. First, the amendments raise no new issues that would necessitate further search and/or substantive reexamination. Second, the amendments clearly overcome the grounds of rejection. Third, the amendments place the application in better form for an appeal.

CLAIM OBJECTIONS

Claims 1, 4 and 23 are objected to because of informalities. Claims 1, 4 and 23 have been amended to address the objection. Thus, reconsideration and withdrawal of the objection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 1, 3, 19 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,843,027 to Stone et al. (hereafter "*Stone et al.*") in view of U.S. Patent No. 6,086,942 to Carden, Jr. et al. (hereafter "*Carden, Jr. et al.*") on the grounds set forth in paragraph 6 of the Official Action.

The present invention is directed to a hose having improved construction which provides, *inter alia*, the ability to retrace individual manufacturing steps thereof, and to allow for the marking of products whose surfaces should not be printed upon. A hose constructed according to the principles of the present invention is set forth in amended claim 1. Amended claim 1 recites:

*1. A multi-layer hose constructed to allow tracing back of individual process steps performed during manufacturing of the hose, the hose comprising:
an opaque, extrudable first layer;
at least one opaque, extrudable second layer connected to the first layer; and
more than one marking section, each marking section comprising more than one letter and/or more than one number arranged in an order that indicates a characteristic of the hose, the marking sections being provided in longitudinally spaced relationship with one another in a recurring mode of arrangement such that at least one marking section can be read when the hose has been divided into sections, the marking sections being arranged between the first layer and the at least one second layer and adapted to be read making use of X rays to determine the characteristic of the hose to thereby allow tracing back of individual process steps performed during manufacturing of the hose.*

Neither *Stone et al.* nor *Carden Jr. et al.*, taken alone or in combination, disclose or suggest a hose having those elements set forth in amended claim 1 above. As evident from the above, claim 1 requires, *inter alia*, "**more than one marking section, each marking section comprising more than one letter and/or more than one number arranged in an order that indicates a characteristic of the**

hose, the marking sections being provided in longitudinally spaced relationship with one another in a recurring mode of arrangement such that at least one marking section can be read when the hose has been divided into sections, the marking sections being arranged between the first layer and the at least one second layer and adapted to be read making use of X rays."

However, nowhere do the grounds for rejection even allege that the proposed combination of *Stone et al.* with *Carden Jr. et al.* disclose or suggest at least this aspect of claim 1. Instead, the grounds for rejection admittedly refuse to consider the above-quoted aspect of the claimed invention. The justification for doing so is that this aspect of the claimed invention constitutes "printed matter." The assertion that this aspect of the claimed invention is not entitled the patentable weight is untenable.

The Federal Circuit has reversed obviousness rejections based upon an assertion of printed matter where the invention comprised a much weaker functional relationship between the substrate in the printed matter than is the case in the present invention. *In re Gulack*, 703 F.2d 1381, 217 USPQ 41 (Fed. Cir. 1983). As the Federal Circuit noted therein:

Differences between an invention and the prior art cited against it cannot be ignored merely because those differences reside in the content of the printed matter. Under section 103, the board cannot dissect a claim, excise the printed matter from it, and declare the remaining portion of the mutilated claim to be unpatentable. The claim must be read as a whole.

Gulack, 217 USPQ at 403.

And

A functional relationship . . . to size or to type of substrate . . . or conveying information about substrate . . . is not required. What is required is the existence of differences between the appealed

claims and the prior art sufficient to establish patentability. The bare presence or absence of a specific functional relationship, without further analysis, is not dispositive of obviousness. Rather, the critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate.

Gulack, 217 USPQ at 404. (Emphasis added)

The Manual of Patent Examining Procedure, which is cited by the examiner in the grounds rejection, advises as follows:

Where the only difference between a prior art product and a claimed product is printed matter that is not functionally related to the product, the content of the printed matter will not distinguish the claimed product from the prior art. *In re Ngai*, 367 F.3d 1336, 1339, 70 USPQ2d 1862, 1864 (Fed. Cir. 2004)< (Claim at issue was a kit requiring instructions and a buffer agent. The Federal Circuit held that the claim was anticipated by a prior art reference that taught a kit that included instructions and a buffer agent, even though the content of the instructions differed.). See also *In re Gulack*, 703 F.2d 1381, 1385-86, 217 USPQ 401, 404 (Fed. Cir. 1983)("Where the printed matter is not functionally related to the substrate, the printed matter will not distinguish the invention from the prior art in terms of patentability...[T]he critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate.").

M.P.E.P. §2112.02. (Emphasis added)

The grounds for rejection apparently rest upon the assertion that "the actual form of the markings does not define or contribute to the function of the device," "the recitation each marking section comprising more than one letter and/or more than one number does not recite a new and unobvious functional relationship between the printed matter in the substrate," and "the printed matter is not related to the function of the hose of conveying some substance through the hose from one location to another" (emphasis added). These assertions are factually and legally incorrect.

First, it should be noted that the grounds rejection rest upon an incorrect principle of law. As evident from the above, "the critical question is whether there

exists any new and unobvious functional relationship between the printed matter and the substrate" (emphasis added). However, the grounds for rejection rest upon the assertion that the printed matter is not entitled to any consideration because the printed matter is not related to the function of conveying some substance through the hose from one location to another. This is clearly at odds with the legal precedent and relevant portion of the MPEP quoted above. Therefore, the grounds rejection are improper and should be withdrawn.

Second, there are at least five aspects of the present invention that demonstrate an adequate, novel and non-obvious functional relationship between the hose and the claimed "printed matter:"

- (1) The location of the markings on the surface of the inner layer provides better and more accurate identification of the constituent components of the hose relative to locating the markings only on the outer surface of the outermost layer. (See, e.g., paragraphs [0004], [0006] and [0047])
- (2) By forming the markings from a material that can be read by x-rays, there is no need to make the our layer of the hose visually transparent. This allows for an optimal choice in the selection of materials from which to form a hose to meet other performance requirements, such as physical strength and chemical compatibility with the fluids to which it is exposed. (See, e.g., paragraphs [0007]-[0010])
- (3) By providing the markings on an outer surface of an inner layer of the hose, the durability of the markings is greatly improved since the markings will not be subjected to abrasion and other environmental influences which can destroy the markings, as would be the case if the markings were simply located on an outer surface of the outer layer of the hose. (See, e.g., paragraphs [0006], [0029] and [0048])
- (4) By forming the marks from a material that can be read by x-rays, it is not necessary that the marks be visually recognizable. This provides the benefit or function of security in that the information conveyed by the markings cannot be ascertained by a simple visual inspection, instead an x-ray analysis of the hose is required in order to obtain the information. This helps prevent unwanted or unnecessary dissemination of production information contained in the markings.
- (5) The arrangement of a plurality of marking sections in a recurring longitudinal arrangement functions to allow reading of the marking

section even when the hose has been divided into a plurality of sections, as would typically be the case in a continual length manufacturing process of hose material. (See, e.g., paragraphs 0019], [0030], and [0044].

Therefore, contrary to the assertions contained in the grounds for rejection, there are definite, novel and non-obvious aspects of the claimed "printed matter." Thus, the grounds rejection are improper for at least this additional reason, and should be withdrawn.

The remaining claims depend from claim 1. Thus, these claims are also distinguishable over the proposed combination of *Stone et al.* and *Carden Jr. et al.* for at least the same reasons noted above.

Claims 6 and 11-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Stone et al.* in view of *Carden, Jr. et al.* and U.S. Patent No. 6,508,784 to Shu (hereafter "*Shu*") on the grounds set forth in paragraph 7 of the Official Action.

Shu is cited as allegedly teaching the use of radiopaque ink as a marker for tracking the exact location of the balloon catheter inside a patient. However, even if the teachings of *Shu* were applied in the manner suggested in the grounds for rejection, the claimed invention would not result. Namely, the proposed combination with *Shu* fails to cure the deficiencies previously noted above in connection with the primary combination of *Stone et al.* with *Carden, Jr. et al.* Thus, even if the proposed 3-reference combination were appropriate, the claimed invention would not result. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 7 and 9 stand rejected under U.S.C. § 103(a) as being unpatentable over *Stone et al.*, in view of *Carden, Jr. et al.*, and further in view of *Shu*, and in

further view of U.S. Patent No. 6,471,758 to Kelderman et al. (hereafter "*Kelderman et al.*") on the grounds set forth in paragraph 8 of the Official Action.

Kelderman et al. is applied as allegedly teaching ink jet printing of radiopaque ink comprising potassium iodine. However, even if the teachings of *Kelderman et al.* were applied in the manner suggested in the grounds for rejection, the claimed invention would not result. Namely, the alleged teachings of *Kelderman et al.* does nothing to cure the deficiencies previously noted above in connection with the principle combination of *Stone et al.* and *Carden, Jr. et al.*, with respect to claim 1, and *Stone et al.*, *Carden, Jr. et al.* and *Shu* with respect to claims 6 and 11-13. Therefore, even if the 4-reference combination were appropriate, the claimed invention would not result. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 8 stands rejected under U.S.C. § 103(a) as being unpatentable over *Stone et al.*, in view of *Carden, Jr. et al.*, and further in view of *Shu*, and in further view of *Kelderman et al.*, and in further view of U.S. Patent No. 6,375,634 to Carroll (hereafter "*Carroll*") on the grounds set forth in paragraph 9 of the Official Action.

Carroll is applied as allegedly disclosing the use of ethanolamine oleate iopamidole used for the preparation of a tumor treatment. However, even if the teachings of *Carroll* were applied in the manner suggested in the grounds for rejection, the claimed invention would not result. Namely, *Carroll* does nothing to cure the deficiencies previously noted above in connection with the principle combination of, with respect to claim 1, *Stone et al.* with *Carden, Jr. et al.*, with respect to claims 6 and 11-13 of *Stone et al.*, *Carden, Jr. et al.*, and *Shu*, and with respect to claims 7 and 9, a combination of *Stone et al.*, *Carden, Jr. et al.*, *Shu* and

Kelderman et al. Therefore, even if the proposed 5-reference combination with appropriate, the claimed invention would not result. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 10 stands rejected under U.S.C. § 103(a) as being unpatentable over *Stone et al.*, in view of *Carden, Jr. et al.*, and further in view of *Shu* and in further view of U.S. Patent No. 6,054,505 to Gundlach et al. (hereafter "*Gundlach et al.*") on the grounds set forth in paragraph 10 of the Official Action.

Gundlach et al. is cited as allegedly teaching printing radiopaque ink bands onto a plastic strand, wherein the ink comprises potassium bromide. However, even if the teachings of *Gundlach et al.* were applied in the manner suggested in the grounds for rejection, the claimed invention would not result. Namely, the alleged teachings of *Gundlach et al.* do nothing to cure the deficiencies previously noted above in connection with the primary combination of *Stone et al.* with *Carden, Jr. et al.*, with respect to claim 1, and *Stone et al.*, *Carden, Jr. et al.* and *Shu* with respect to claims 7 and 9. Thus, even if the proposed 3-reference combination were appropriate, the claimed invention would not result. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 4 and 21-24 stand rejected under U.S.C. § 103(a) as being unpatentable over *Stone et al.* in view of *Carden, Jr. et al.* on the grounds set forth in paragraph 13 of the Official Action.

A hose constructed according to a further aspect of the present invention is set forth in amended claim 4. Amended claim 4 recites:

4. A multi-layer fuel hose for a motor vehicle constructed to allow tracing back of individual process steps performed during manufacturing of the hose, the hose comprising:
 an opaque, extruded inner layer made of rubber;
 an opaque, first outer layer made of rubber extruded on the inner layer; and
 more than one first marking section arranged between the inner layer and the first outer layer in a longitudinally spaced relationship with one another in a recurring mode of arrangement such that at least one marking section can be read when the hose has been divided into sections, each first marking section comprising more than one letter and/or more than one number arranged in an order that indicates a characteristic of the hose and adapted to be read making use of X rays to determine the characteristic of the hose to thereby allow tracing back of individual process steps performed during manufacturing of the hose.

A hose constructed according to yet another aspect of the present invention is set forth in amended claim 23. Amended claim 23 recites:

23. A multi-layer fuel hose for a motor vehicle constructed to allow tracing back of individual process steps performed during manufacturing of the hose, the hose consisting of:
 an opaque, extruded inner layer;
 an opaque, outer layer extruded on the inner layer; and
 more than one marking section arranged between the inner layer and the outer layer in a longitudinally spaced relationship with one another in a recurring mode of arrangement such that at least one section can be read when the hose has been divided into sections, each marking section comprising more than one letter and/or more than one number arranged in an order that indicates a characteristic of the hose and adapted to be read making use of X rays to determine the characteristic of the hose to thereby allow tracing back of individual process steps performed during manufacturing of the hose.

As evident from the above, both claims 4 and 23 each require, *inter alia*,
"more than one [first] marking section arranged between the inner layer and the [first] outer layer in a longitudinally spaced relationship with one another in a recurring mode of arrangement such that at least one marking section can be read when the hose has been divided into sections, each [first] marking

section comprising more than one letter and/or more than one number arranged in an order that indicates a characteristic of the hose and adapted to be read making use of x-rays."

The proposed combination of *Stone et al.* with *Carden, Jr. et al.* fails to render either claims 4 or 23 obvious for at least the same reasons noted above in connection with the rejection of claim 1. Namely, the grounds for rejection rest upon the incorrect legal premise that the "printed matter" must be functionally related to "the" function of the hose chosen by the Examiner, namely, "conveying some substance through the hose from one location to another." Second, reference is made to the five identified aspects of the presently claimed invention which represent adequate, novel and non-obvious aspects of the "printed matter" of the presently claimed invention. Therefore, for at least the same reasons noted above in connection with the discussion of the rejection of claim 1, the rejection of claims 4 and 23 set forth above is improper and should be withdrawn. The remaining claims depend from either claim 4 or claim 23. Thus, these claims are also distinguishable over the applied prior art for at least the same reasons noted above.

Claim 5 stands rejected under U.S.C. § 103(a) as being unpatentable over *Stone et al.* in view of *Carden, Jr. et al.*, and in further view of U.S. Patent No. 5,576,072 to Hostettler et al. (hereafter "*Hostettler et al.*") on the grounds set forth in paragraph 14 of the Official Action.

Hostettler et al. is applied as allegedly teaching the use of ethylene-alkyl acrylate copolymers for use in forming catheters. However, even if the alleged teachings of *Hostettler et al.* were applied in the manner set forth in the grounds for rejection, the claimed invention would not result. Namely, these teachings of

Hostettler et al. fail to cure the deficiencies previously noted above in connection with the primary combination of *Stone et al.* with *Carden, Jr. et al.* Thus, for the reasons noted above, the rejection is improper and should be withdrawn.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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Date: March 21, 2008

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